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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,404	10/22/2004	Tsuyoshi Kashima	885A.0002.U1(US)	4456
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EXAMINER				
BRANDT, CHRISTOPHER M				
ART UNIT		PAPER NUMBER		
2617				
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10/13/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/500,404

**Applicant(s)**

KASHIMA, TSUYOSHI

**Examiner**

CHRISTOPHER M. BRANDT

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 13-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 6, 2009 has been entered.

### ***Response to Amendment***

This Action is in response to applicant's amendment filed on August 6, 2009. **Claims 1-10, 13-16, and 18-21** are now currently pending in the present application.

### ***Response to Arguments***

Applicant's arguments filed August 6, 2009 have been fully considered but they are not persuasive.

With regard to applicant's argument that Chheda does not disclose or suggest Applicant's claimed subject matter of "selecting, as a candidate node for next communication with the mobile node, the specified node for which a largest number of overlaps has been counted", the examiner agrees. Chheda teaches that sectors are prioritized within the neighbor set of another sector in order of importance thereof with respect to that sector, where using the overlap technique, neighbors are include in the updated neighbor set first in order of the number of individual neighbor sets in which they are included (i.e. overlap) (column 8 lines 45-53, column 9 lines 33-39, column 10 lines 57-67). Chheda also discloses (as applicant has indicated) different sets, such as a "candidate set." It is noted that one of ordinary skill in the art, would

read applicant's "candidate node" as a candidate node within a "candidate set." As a result, Chheda does disclose "selecting, as a candidate node for next communication with the mobile node the specified node in the communication zone of which the largest number of nodes have been counted." Moreover, Chheda teaches determining whether neighbors are active or candidate set members. A variable "A" is set equal to the number of individual neighbor sets in which neighbor X is included and a variable "B" is set equal to a combined rank calculated for neighbor X. It is noted that Chheda states that there are individual neighbor sets, or lists, a sector is on, the more important it is (i.e. overlapping) (column 8 lines 42-44, column 9 lines 6-7, 14-19). As a result, Chheda does in fact teach at a predetermined period at which the mobile station performs specifying, counting, and selecting. Therefore, even if Chheda provides different solutions for different problems, Chheda still reads upon the claims and in the process provides a solution to the particular problem of the claimed invention.

With regard to applicant's argument that Chheda and Rohani does not disclose wherein the predetermined period is changed in accordance with a movement speed of the mobile node, the examiner respectfully disagrees. Rohani states that the mobile station's speed is taken into account in order to determine the frequency at which the Extended Hand-off Direction message is transmitted (column 5 lines 34-46). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Rohani teach wherein the predetermined period is changed in accordance with a movement speed of the mobile node.

With regard to applicant's argument that Chheda and Gross does not disclose the predetermined period is changed in accordance with an arrangement density of the specified nodes, the examiner respectfully disagrees. Gross states hand-offs based on subscriber density

(column 6 line 60 - column 7 line 8). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Gross teach the predetermined period is changed in accordance with an arrangement density of the specified nodes.

With regard to applicant's argument that Chheda and Haas does not disclose wherein the specified nodes are mobile nodes, the examiner respectfully disagrees. Haas shows an ad-hoc network, which comprises of mobile nodes (column 4 lines 47-56). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Haas teach wherein the specified nodes are mobile nodes.

With regard to applicant's argument that Agrawala does not disclose numbers of nodes in the communication zones of the mobile node and its neighbor nodes are counted to determine a next node for communication, the examiner agrees. However, Agrawala was relied upon to show that the specified nodes are uniformly dispersedly arranged (figure 1, paragraph 31). As argued above, Chheda does teach the argued features of the independent claims. Therefore, Chheda in view of Agrawala teach the specified nodes are uniformly dispersedly arranged.

As a result, the claims are written such that they read upon the cited references.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1–6, 16, and 19–21** are rejected under 35 USC 102(b) as being anticipated by **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)**.

Consider **claim 2 (and similarly applied to claims 1 and 15)**. Chheda discloses a method comprising:

specifying neighbor nodes present within a communication zone of a mobile node; specifying neighbor nodes for each specified neighbor node of the mobile node that are present within a communication zone for a corresponding one of the specified neighbor nodes of the mobile node (column 9 lines 6-7, read as determining whether neighbors are active or candidate set members);

counting a number of overlaps between the communication zone of the mobile node and communication zones for each of the specified nodes (column 8 lines 42-44, column 9 lines 14-19, read as a variable “A” is set equal to the number of individual neighbor sets in which neighbor X is included and a variable “B” is set equal to a combined rank calculated for neighbor X. It is noted that Chheda states that there are individual neighbor sets, or lists, a sector is on, the more important it is (i.e. overlapping)); and

selecting, as a candidate node for next communication with the mobile node, the specified node for which a largest number of overlaps has been counted (column 8 lines 45-53, column 9 lines 33-39, column 10 lines 57-67, read as sectors are prioritized within the neighbor set of another sector in order of importance thereof with respect to that sector, where using the overlap technique, neighbors are include in the updated neighbor set first in order of the number of individual neighbor sets in which they are included (i.e. overlap)).

Consider **claim 3 and as applied to claim 1**. Chheda discloses wherein the selection is not performed if the specified node in the communication zone of which the largest number of nodes have been counted is the same as a node with which the mobile node is currently in communication (column 10 lines 49-52).

Consider **claim 4 and as applied to claim 3**. Chheda discloses wherein when there are a plurality of specified nodes in the communication zone of which the largest number has been counted, an arbitrary one node is selected (column 12 lines 49-64).

Consider **claim 5 and as applied to claim 1**. Chheda discloses wherein the mobile node performs said specifying, said counting, and said selecting at predetermined periods (column 7 lines 9-14, read as when a mobile unit wants to go into soft handoff).

Consider **claim 6 and as applied to claim 2**. Chheda discloses wherein the mobile node performs said specifying the neighbor nodes present within the communication zone of the mobile node, said specifying the neighbor nodes present within the communication zones of the neighbor nodes, said counting, and said selecting at predetermined periods (column 7 lines 9-14, read as when a mobile unit wants to go into soft handoff).

Consider **claim 16 and as applied to claim 15**. Chheda discloses wherein the apparatus is the mobile node which moves among a plurality of nodes (column 7 lines 10-14).

Consider **claims 19-21 and as applied to claims 1, 2, and 15**. Chheda discloses where the selection of the candidate node occurs without using a received signal strength indicator (column 8 lines 45-53, column 9 lines 33-39, column 10 lines 57-67, Chheda states that a C/I can be used, however, no received signal strength indicator is discussed).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 7** is rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Rohani (US Patent 6,195,342 B1)**.

Consider **claim 7** and as applied to **claim 5**. Chheda discloses the claimed invention but fails to explicitly teach wherein the predetermined period is changed in accordance with a movement speed of the mobile node.

However, Rohani teaches wherein the predetermined period is changed in accordance with a movement speed of the mobile node (column 5 lines 34-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Rohani into the invention of Chheda in order to use patterns of movement to predict the next location of the mobile station (column 5 lines 46-49).



**Claim 8** is rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Gross et al. (US Patent 6,856,803 B1, hereinafter Gross)**.

Consider **claim 8 and as applied to claim 5**. Chheda discloses the claimed invention but fails to explicitly teach wherein the predetermined period is changed in accordance with an arrangement density of the specified nodes.

However, Gross teaches wherein the predetermined period is changed in accordance with an arrangement density of the specified nodes (column 6 line 60 – column 7 line 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Gross into the invention of Chheda in order to place high-density cells into high priority candidates which would therefore be cycled into the time insensitive handoff candidate list slots more frequently (column 6 lines 36-41).

**Claims 9, 10, and 18** are rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Haas (US Patent 6,304,556 B1)**

Consider **claims 9, 10, and 18 and as applied to claims 1, 2, and 15, respectively**. Chheda discloses the claimed invention but fails to explicitly teach wherein the specified nodes are mobile nodes.

However, Haas teaches wherein the specified nodes are mobile nodes (figure 1, column 4 lines 47-56, read as ad-hoc network).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Haas into the invention of Chheda in

order to allow efficient and fast route discovery in the ad-hoc network communication environment (column 4 lines 47-56).

**Claims 13 and 14** are rejected under 35 USC 103(a) as being unpatentable over **Chheda et al. (US Patent 5,946,621, hereinafter Chheda)** in view of **Agrawala et al. (US PGPUB 2005/0020275 A1, hereinafter Agrawala)**.

Consider **claims 13 and 14 and as applied to claims 1 and 2, respectively**. Chheda discloses the claimed invention but fails to explicitly teach wherein the specified nodes are uniformly dispersedly arranged.

However, Agrawala teaches wherein the specified nodes are uniformly dispersedly arranged (figure 1, paragraph 31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Agrawala in order to enable a wireless communication node to determine accurately and precisely the spatial location of neighboring communications nodes distributed in three-dimensional space (paragraph 26).

### **Conclusion**

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building

401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Brandt whose telephone number is (571) 270-1098.

The examiner can normally be reached on 7:30a.m. to 5p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

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Christopher M. Brandt

C.M.B./cmb

October 10, 2009

/George Eng/

Supervisory Patent Examiner, Art Unit 2617